What is claimed is:

1. A semiconductor device comprising:

a first conductive type semiconductor region formed in a semiconductor substrate;

a gate electrode formed on said first conductive type semiconductor region;

a channel region formed immediately below said gate electrode in said first conductive type semiconductor region; and

a second conductive type first diffusion layer constituting source/drain regions formed at opposite sides of said channel region in said first conductive type semiconductor region,

said gate electrode being formed of polycrystalline silicon-germanium, in which germanium concentration of at least one of a source side and a drain side is higher than that of a central portion.

2. The semiconductor device according to claim 1, wherein the germanium concentration in said gate electrode is continuously increased from the drain side to the source side.

3. The semiconductor device according to claim 1, wherein the germanium concentration in said gate electrode is continuously decreased from the drain and source sides to the central portion.

4. The semiconductor device according to claim 1, further comprising a second conducive type second diffusion layer formed between said first diffusion layer and said channel region in said first conductive type semiconductor region and having a lower impurity concentration and a shallower depth than said first diffusion layer.

5. The semiconductor device according to claim 1, further comprising a gate sidewall of an insulating material formed at a side portion of said gate electrode, wherein an oxide

layer is formed between said gate sidewall and an edge of said gate electrode having a higher germanium concentration.

6. A semiconductor device comprising:

a first conductive type semiconductor region formed in a semiconductor substrate;

a gate electrode of polycrystalline silicon-germanium formed on said first conductive type semiconductor region;

a channel region formed immediately below said gate electrode in said first conductive type semiconductor region;

a second conductive type first diffusion layer constituting source/drain regions formed at opposite sides of said channel region in said first conductive type semiconductor region; and

an oxide layer formed on at least one of said source region side and a drain region side of said gate electrode,

a germanium concentration in a region with a thickness substantially identical to the thickness of said oxide layer, ranging from the side of said gate electrode where said oxide layer is formed, is 1.5 to 2 times the germanium concentration of a central portion of said gate electrode.

7. The semiconductor device according to claim 6, wherein said oxide layer is formed on the source side of said gate electrode, and the germanium concentration of said gate electrode is continuously decreased from the source side to the drain side.

8. The semiconductor device according to claim 6, wherein the germanium concentration of said gate electrode is continuously decreased from the source and drain sides to the central portion.

9. The semiconductor device according to claim 6, further comprising a second conducive type second diffusion layer formed between said first diffusion layer and said channel region in said first conductive type semiconductor region

and having a lower impurity concentration and a shallower depth than said first diffusion layer.

10. A semiconductor device comprising:

a first MISFET including:

a first conductive type first semiconductor region formed in a semiconductor substrate;

a first gate electrode formed on said first semiconductor region;

a first channel region formed immediately below said first gate electrode in said first semiconductor region; and

a second conductive type first diffusion layer constituting source/drain regions formed at opposite sides of said first channel region in said first conductive type semiconductor region; and

a second MISFET including:

a second conductive type second semiconductor region formed in the semiconductor substrate and isolated from said first semiconductor region;

a second gate electrode formed on said second semiconductor region;

a second channel region formed immediately below said second gate electrode in said second semiconductor region; and

a first conductive type second diffusion layer constituting source/drain regions formed at opposite sides of said second channel region in said second conductive type semiconductor region,

said first and second gate electrodes being formed of polycrystalline silicon-germanium, in which germanium concentration of at least one of a source side and a drain side is higher than a central portion.

11. The semiconductor device according to claim 6, wherein the germanium concentration of said first and second gate electrodes is continuously increased from the drain side to the source side.

12. The semiconductor device according to claim 10, wherein the germanium concentration of said first and second gate electrodes is continuously decreased from the drain and source sides to the central portion.

13. A method of manufacturing a semiconductor device comprising:

forming a gate electrode containing polycrystalline silicon-germanium on a first conductive type semiconductor region in a semiconductor substrate;

selectively forming a first insulating layer on said gate electrode such that a portion near one side of said gate electrode is exposed; and

forming an oxide layer by selectively oxidizing silicon near the exposed side of said gate electrode.

14. The method of manufacturing a semiconductor device according to claim 13, further comprising:

forming a second conductive type first diffusion layer after the forming of the oxide layer by removing the first insulating layer and performing ion-implantation of a second conductive type impurity in the semiconductor region using the gate electrode as a mask.

15. The method of manufacturing a semiconductor device according to claim 13, further comprising:

forming a gate sidewall of an insulating material at a side portion of the gate electrode after the forming of the fist diffusion layer; and

forming a second conductive type second diffusion layer constituting source/drain regions by performing ion-

implantation of a second conductive type impurity in the semiconductor region using the gate electrode and the gate sidewall as masks.

16. A method of manufacturing a semiconductor device comprising:

forming a gate electrode containing polycrystalline silicon-germanium on a first conductive type semiconductor region in a semiconductor substrate; and

forming an oxide layer all over the gate electrode by selectively oxidizing silicon in the gate electrode.

17. The method of manufacturing a semiconductor device according to claim 16, further comprising:

forming a second conductive type first diffusion layer after the forming of the oxide layer by performing ion-implantation of a second conductive type impurity in the semiconductor region using the gate electrode as a mask.

18. The method of manufacturing a semiconductor device according to claim 16, further comprising:

forming a gate sidewall of an insulating material at a side portion of the gate electrode after the forming of the first diffusion layer; and

forming a second conductive type second diffusion layer constituting source/drain regions by performing ion-implantation of a second conductive type impurity in the semiconductor region using the gate electrode and the gate sidewall as masks.